

ABSTRACT

A mobile communication system having M transmission antennas for receiving P information bit streams and encoding the received information bit streams with a space-time trellis code (STTC) according to an optimal generator polynomial; modulating the encoded P information bit streams in a predetermined modulation scheme and outputting modulation symbol streams; and puncturing at least one modulation symbol in a predetermined position from each of the M modulation symbol streams, and transmitting the punctured modulation symbol streams through the M transmission antennas, thereby increasing a data rate while maintaining maximum diversity gain.